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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,131	06/30/2005	Masaji Takahashi	Q88399	4527

23373 7590 03/30/2007  
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WASHINGTON, DC 20037

EXAMINER
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FRISTOE JR, JOHN K

ART UNIT	PAPER NUMBER
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3753

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/30/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/541,131

Applicant(s)

TAKAHASHI ET AL.

Examiner

John K. Fristoe Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 January 2007.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-4 and 6-10 is/are rejected.  
7) ☒ Claim(s) 5 and 11 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 30 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 1/25/2007 have been fully considered but they are not persuasive. Applicants argue that Mannhardt does not disclose the diaphragm blocking the halfway portion of the channel, the examiner disagrees. The diaphragm 16 blocks the halfway portion of the channel from the bottom portion of the channel (below element 16 in figure 1). Applicants then argue that Mannhardt not disclose two housing parts, the examiner disagrees. It is clear from figure 1 that element 10 is different from the housing portion surrounding element 34 because of the cross hatching therefore there are two housing parts. Applicants further argue that Mannhardt does not disclose inner and out ribs as recited in Application claim 5, the examiner agrees and the rejection of claim 5 has been withdrawn. Applicants then argue that Mannhardt not disclose a vent hole, the examiner disagrees. Any fluid that passes by element 24 through the auxiliary channel and will pass through the hollow opening or "vent". Since the prior art rejections are being maintained the instant Office action has been made final.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "either one or both of the input port and the output port are disposed such that either one or both the axes of the input port and the output port are intersected by the valve stem of the valve disk" recited in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing

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sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 4,941,447 (Mannhardt). Mannhardt discloses a solenoid valve comprising an electromagnetic coil (34), a fixed iron core (below element 34 in figure 1), a valve disk (28), a moveable iron core (26), a valve port (surrounding element 16 in figure 1), a channel (12), input port (14), an output port (20), a plurality of through holes (18), wherein the axes of the input port (14) intersects the valve stem (figure 1), wherein the input port (14) is lateral of the valve port (surrounding

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element 16 in figure 1), a guide boss (24), wherein the valve disc (28) is in the form of a cylinder (figure 1), one housing divided body (near element 34), other housing divided body (near element 14), an inner rib (one of element 36), an outer rib (another of element 36), wherein the cylindrical-shaped valve (28) is bored (figure 1) into a vent hole, an auxiliary channel (around the periphery of the cylindrical valve in figure 1).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,941,447 (Mannhardt) in view of 6,935,612 (McCombs et al.). Mannhardt discloses a solenoid valve comprising an electromagnetic coil (34), a fixed iron core (below element 34 in figure 1), a valve disk (28), a moveable iron core (26), a valve port (surrounding element 16 in figure 1), a channel (12), input port (14), an output port (20), a plurality of through holes (18), herein the axes of the input port (14) intersects the valve stem (figure 1), wherein the input port (14) is lateral of the valve port (surrounding element 16 in figure 1), a guide boss (24), wherein the valve disc (28) is in the form of a cylinder (figure 1), one housing divided body (near element 34), other housing divided body (near element 14), an inner rib (one of element 36), an outer rib (another of element 36), wherein the cylindrical-shaped valve (28) is bored (figure 1) into a vent hole, an auxiliary channel (around the periphery of the cylindrical valve in figure 1) but lacks a hemispherical bumper. McCombs et al. teach a solenoid actuated valve comprising an armature

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assembly (16) and a hemispherical bumper (38). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the solenoid valve of Mannhardt by adding a hemispherical bumper as taught by McCombs et al. in order to reduce the force when the armature hits the fixed core.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,941,447 (Mannhardt) in view of U.S. Pat. No. 4,621,788 (Delew et al.). Mannhardt discloses a solenoid valve comprising an electromagnetic coil (34), a fixed iron core (below element 34 in figure 1), a valve disk (28), a moveable iron core (26), a valve port (surrounding element 16 in figure 1), a channel (12), input port (14), an output port (20), a plurality of through holes (18), wherein the axes of the input port (14) intersects the valve stem (figure 1), wherein the input port (14) is lateral of the valve port (surrounding element 16 in figure 1), a guide boss (24), wherein the valve disc (28) is in the form of a cylinder (figure 1), one housing divided body (near element 34), other housing divided body (near element 14), an inner rib (one of element 36), an outer rib (another of element 36), wherein the cylindrical-shaped valve (28) is bored (figure 1) into a vent hole, an auxiliary channel (around the periphery of the cylindrical valve in figure 1) but lacks the bobbin and the body made of the same material. Delew et al. teach a solenoid actuated valve comprising a bobbin (34) made of plastic (col. 2, lines 45-46) and a body (12) made of plastic (col. 2, lines 24-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the solenoid assembly of Mannhardt by making the bobbin and body from the same material such as plastic as taught by Delew et al. in order to reduce the number of materials required to produce the valve and therefore reduce manufacturing costs.

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Regarding the body members being “welded”, the patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product in the prior art, the claim is unpatentable even though the prior product was made by a different process (see MPEP 2113).

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,941,447 (Mannhardt) in view of U.S. Pat. No. 6,564,782 (Fujimoto et al.). Mannhardt discloses a solenoid valve comprising an electromagnetic coil (34), a fixed iron core (below element 34 in figure 1), a valve disk (28), a moveable iron core (26), a valve port (surrounding element 16 in figure 1), a channel (12), input port (14), an output port (20), a plurality of through holes (18), wherein the axes of the input port (14) intersects the valve stem (figure 1), wherein the input port (14) is lateral of the valve port (surrounding element 16 in figure 1), a guide boss (24), wherein the valve disc (28) is in the form of a cylinder (figure 1), one housing divided body (near element 34), other housing divided body (near element 14), an inner rib (one of element 36), an outer rib (another of element 36), wherein the cylindrical-shaped valve (28) is bored (figure 1) into a vent hole, wherein the valve assembly is connected to the fuel system of an engine (col. 1, lines 10-14) and an auxiliary channel (around the periphery of the cylindrical valve in figure 1) but lacks the valve being connected to a canister for absorbing fuel vapors. Fujimoto et al. teach connecting a valve (26) to a canister that collects fuel vapors (figure 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the solenoid valve assembly of Mannhardt by connecting the valve to canister for collecting fuel vapors as taught by Fujimoto et al. since the valve is capable of connecting to any sort of receptacle.

*Allowable Subject Matter*

9. Claims 5 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John K. Fristoe Jr. whose telephone number is (571) 272-4926. The examiner can normally be reached on Monday-Friday, 7: 00 a.m-4: 30 p.m.

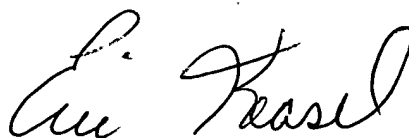
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric S. Keasel can be reached on (571) 272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JKF



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Art Unit 3753